KEL'TSEV, N.V.; MYAKINENKOV, V.I.; TOROCHESHNIKOV, N.S.

Use of fine-porous adsorbents for separating the acetylenic
hydrocarbons. Khim. prom. 40 no.11:813-817 N '64
(MIRA 18:2)

S/564/61/003/000/013/029
D207/D304

AUTHORS: Kokorish, Ye. Yu., and Myakinenkova, E. V.

TITLE: On the problem of determining dislocation density by chemical etching of germanium monocrystals

SOURCE: Akademiya nauk SSSR. Institut kristallografii. Rost kristallov, v. 3, 1961, 371, 379

TEXT: The authors determined dislocation densities on the surface of germanium monocrystals using four chemical etchants; the purpose of the work was to throw some light on the contradictions in published results. The etchants were: CP-4 (2 – 5 min. etching duration), potassium ferricyanide solution $\left(8g \quad K_3 \sqrt{Fe(CH)_6}, \ 12 \ g \quad KOH, \ 100 \ cm^3 \quad H_2O \right.$ 1 – 5 min. in boiling solution $\left.\right)$; iodine solution $\left(20 \ cm^3 \quad HNO_3 , \right.$ 16 cm^3 HF, 8 cm^3 CH_3COOH, 0.3 mg $\quad$ I; 6 – 15 min. etching $\left.\right)$; and No. 2 solution $\left(10 \ cm^3 \quad HF, \ 10 \ cm^3 \quad H_2O_2, \ 40 \ cm^3 \quad H_2O \right.$; 3 – 10 min.

Card 1/3

On the problem...

S/564/61/003/000/013/029
D207/D304

most recent references to the English-language publications read as
follows: A. D. Kurtz, S. A. Kulin and B. L. Averbach, Phys. Rev., 101,
1285, 1956; J. Hornstra, J. Phys. a. Chem. Solids, 5, 129, 1958; W.
Bardsley, R. L. Bell, B. W. Straughan, J. Electr. a. Control, 5, 19,
1958; R. G. Rhodes, K. O. Batsford, J. Electr. a. Control., 3, 403, 1957.

Card 3/3

L 18903-63   EWP(q)/EWT(m)/BDS   AFFTC   JD/JG

ACCESSION NR: AT3001910   S/2912/62/000/000/0174/0183

AUTHORS: Anokhin, B. G., Medvedev, S. A., Myakinenkova, E. V., Skvortsov, I. M.

TITLE: Some peculiarities of the growth and twinning structure of dendrites of Ge and of the anomalous segregation of impurities in the process of dendritic crystallization.

SOURCE: Kristallizatsiya i fazovyye perekhody. Minsk, Izd-vo AN BSSR, 1962, 174-183.

TOPIC TAGS: crystal, crystallization, crystallography, dendrite, dendritic, segregation, twinning, Ge, Ga, In, B, Sb, polysynthetic.

ABSTRACT: The paper presents the results of experimental work on the growing of long dendritic bands of Ge with specified electrophysical properties. The paper discusses the effect of the conditions of growth on the character of the growth of the dendrites, including the effect of the twinning structure of dendritic priming. The morphology of the dendritic twinning is examined in detail. The relationship between the segregation coefficients of some elements on their concentration in the liquid phase is established experimentally, also the distribution of alloying additions across the cross section of the dendrite. The dendritic Ge crystals were obtained

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L 18903-63

ACCESSION NR: AT3001910

by growing them by the Chokhral'skiy method from an alloy cooled 15-20°C below,
the crystallization point; dendritic primers oriented along {211} were employed.
Linear growth rate: 10-15 cm/min in purified H and under vacuum. Dendrites
grown under vacuum are free of the surface imperfections encountered because of
surface supercooling in H; the vacuum dendrites form perfect bands without any
branching or parasitic crystallization. The study of the morphology of polysynthe-
tic dendrite twins of Ge and its relationship with the character of the growth of the
dendrites was carried out as follows: (1) Investigation (under 600 to 750x enlarge-
ment) of dendritic microsections after short-term chemical etching; (2) similar
examination of the transverse fracture surface of the dendrites (by the Faust-John
method; Electrochem. Soc., J., v. 107, no. 2, 1960). At least two twinning sur-
faces were found on all dendrites; four groups of dendrites are identified accord-
ing to their mutual placement of twinning planes. The study of dendrites grown from
strongly alloyed alloys did not support the Billig hypothesis of the possibility of im-
purity twinning (Acta Metallurgica, v. 5, no. 1, 1957). Experimental establishment
of the dependence of the segregation coefficients of Ga, In, B, and Sb in dendritic
growth with respect to their concentration in the liquid phase yielded the following
values: In from $2 \cdot 10^{14}$ to $4 \cdot 10^{19}$ atoms/cm^3; Ga from $1 \cdot 10^{14}$ to $6 \cdot 10^{18}$; Sb from
$6 \cdot 10^{13}$ to $2 \cdot 10^{20}$; B from $1 \cdot 10^{14}$ to $4 \cdot 10^{19}$ atoms/cm^3. The investigation of the
distribution of alloying impurities across the cross section of the dendrites showed

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L 18903-63

ACCESSION NR: AT3001910

a preferential segregation along the edges of the crystal. This conclusion is valid for single-crystal portions of the dendrites only. Orig. art. has 7 figures.

ASSOCIATION: none

SUBMITTED: 00   DATE ACQ: 16Apr63   ENCL: 00

SUB CODE: CH, PH, MA, EL.   NO REF SOV: 001   OTHER: 007

Card 3/3

MYAKINENKOVA, E.V.

18.9500   1043 1143

AUTHORS: Medvedev, M. A., Anokhin, B. G., Skvortsov, I. M.,
Korotkov, A. S., and Myakinenkova, E. V.

TITLE: Peculiarities in the growth, twinning and structure of
germanium dendrites and abnormal impurity segregation in
the process of dendritic crystallization

TEXT: The optimum conditions for growing long dendritic germanium
crystals were studied. The twin structure of real dendrites was deter-
mined and complete agreement was found between the twin structure of seeds
and of crystals grown from them. Impurity segregation coefficients and
the distribution of impurities were measured. The dendrites were grown by
the Czochralski method (rate of linear growth 10 - 15 cm/min) and were
150 - 300 μ thick, 1.5 - 3 mm wide and 400 mm long. They were produced
with varying impurity concentrations, surface perfection and thickness.
They could be divided into 4 groups according to twinning properties:
(1) Homogeneous twin structure right across; (2) homogeneous twin struc-
ture, but only in the middle of the dendrite; (3) cross-sectional twin

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Peculiarities in the growth...

structure but becoming simplified toward the edges; (4) cross-sectional twin structure which becomes more complex toward the edges; up to 32 twins were observed at the edges. Billig's proposition (Acta Metall., $\underline{5}$, No. 1, 1957) that twinning may be caused by impurities was not confirmed: impurity concentrations of up to $10^{20} cm^{-3}$ caused no additional twinning effects. However, a higher impurity has an unfavorable influence on the quality of the dendrites. The segregation coefficients were measured for In, Ga, Sb, and B in dependence on their concentration in liquid phase. In each case 5 - 7 measurements were made in the following ranges of concentrations: In: $2 \cdot 10^{14} - 4 \cdot 10^{19} cm^{-3}$, Ga: $1 \cdot 10^{14} - 6 \cdot 10^{18} cm^{-3}$, Sb: $6 \cdot 10^{13} - 2 \cdot 10^{20} cm^{-3}$, B: $1 \cdot 10^{14} - 4 \cdot 10^{19} cm^{-3}$. In, Ga, and Sb show anomalously high segregation coefficients ($K_{eff} > 1$) at concentrations of $10^{14} cm^{-3}$, which fall smoothly with increasing concentration. At $10^{18} - 10^{20}$ K_{eff} of Ga coincides with the equilibrium values. K_{eff} of B reaches 0.5 at $10^{14} - 10^{15} cm^{-3}$ and drops to 0.03 at $4 \cdot 10^{19} cm^{-3}$. The cross distribution of impurities was determined from the potential distribution, measured by

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Peculiarities in the growth...

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S/181/62/004/001/006/052
B102/B138

means of probes. The impurities were found to be nonuniformly distributed; e. g. for In the concentration ratio $c_{centr.}:c_{edge} \simeq 1:10$. There are 7 figures and 7 non-Soviet references. The four most recent references to English-language publications read as follows: A. Bennet, R. Longini. Phys. Rev. 116, No. 1, 1959; D. R. Hamilton, R. C. Seidensticker. J. Appl. Phys. 31, No. 7, 1960; R. S. Wagner. Acta Metall., 8, No. 1, 1960; J. W. Faust, H. F. John. J. Electrochem. Soc. 107, No. 6, 1960.

SUBMITTED: July 6, 1961

Card 3/3

MYAKININ, E.F.

Threshold of the secondary electron emission of nickel and molybdenum. A. R. Shul'man and E. I. Myakinin. Doklady Akad. Nauk S.S.S.R. 91, 1075 (translation issued as U.S. Atomic Energy Comm. NSF-tr-177, 4 pp.(1954)).—The threshold of the secondary electron emission is the smallest value of the energy of the primary electrons for which the no. of slow secondary electrons is distinguishable from zero. The measurements are made in a vacuum of 2×10^{-7} as measured with an ionization gage. In order to obtain reliable results the target is baked in high vacuum for 10 days. The measured value of the threshold of secondary emission somewhat exceeds the work function of the given metal. For Ni the work function is 5.05 e.v. and the emission threshold 5.2 e.v.; the corresponding figures for Mo are 4.16 e.v. and 4.3 e.v. The existence of a threshold secondary emission close to the work function of the metal indicates that, at least for small velocities of primary electrons, the secondary electrons come from the conducting region. ——George Meister

MYAKININ, E.I.

Secondary-Electron Emission from Nickel and Molybdenum Produced by Primary Electrons of Low Energy. A. R. Shul'man and E. I. Myakinin (*Zhur. Tekh. Fiziki*, 1956, 28, (10), 2223-2283).—[In Russian]. An apparatus is described for the study of secondary-electron emission produced by primaries of < 14-eV. energy. An extensive series of graphs gives the secondary yield and energy distribution as functions of primary energy (V_p) for Ni and Mo targets with and without careful degassing. The threshold energy for secondary emission agrees well with the work-function (ϕ) determined from thermo-e.m.f. and other data. Beginning when $V_p > \phi$, very slow secondaries are emitted along with the elastically reflected primaries. As V_p increases the mean energy of the secondaries increases. The results can be explained if it is assumed that when $V_p \approx \phi$ the scattering of electrons is spherically symmetric—unlike the known facts for higher V_p.
—A. F. B.

MYAKININ, L.V.

Shifts during the bending of orthotropic cantilever beams
under a load distributed following a linear law. Nauch.-tekh.
inform.biul.LPI no.1/2:172-176 '58.   (MIRA 12:6)
              (Elastic rods and wires)

MYAKININ, L.V.; PAVLOV, P.A.

Optical-mechanical apparatus for measuring small deformations
in prismatic samples. Nauch.-tekh.inform.biul.LPI no.1/2:
177-180 '58.   (MIRA 12:6)
        (Deformations (Mechanics))
        (Measuring instruments)

MYAKININ, L.V., kand.tekhn.nauk

Test of pipes made of plywood for simultaneous stretching,
torsion and internal hydrostatic pressure. Trudy LIBI no.23:
139-144 '58.   (MIRA 12:5)
              (Plywood--Testing)
          (Pipe, Wooden--Testing)

MYAKININ, L.V.

Constants of the elastic strain of equal-ply veneers. Trudy LPI
no.197:95-98 '58.   (MIRA 13:3)
          (Plywood) (Strains and stresses)

MYAKININ, L.V.

Strength of equal-ply veneers in flat uniform tension. Trudy LPI
no.197:99-107 '58.   (MIRA 13:3)
        (Plywood) (Strains and stresses)

28(5)
AUTHORS: Yagn, Yu. I., Kovalov, K. F., Myakinin, L. V., SOV/32-25-6-46/53
                Pavlov, P. A., Tseytlin, V. Ya.

TITLE: Device for Testing Simultaneous Extension and Torsion (Ustanovka
                dlya ispytaniy na odnovremennoye rastyazheniye i krucheniye)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 6, pp 756-757 (USSR)

ABSTRACT: A device was constructed which permits a simultaneous extension
                (with a load of up to 125 t) and torsion (with a torsional moment up
                to 7000 kgm) (Fig) for the testing of axial-models of hydroturbines
                with respect to construction variants designed by the Leningradskiy
                metallicheskiy zavod (Leningrad Metal Works) for the
                Kuybyshevskaya i Bratskaya GES (Kuybyshev and Bratsk Hydroelectric
                Power Plants). The arrangement is in principle a hydraulic press with
                a system for the extension of the sample between the piston and the
                upper traverse. Torsion is carried out with hydraulic jacks up to an
                angle of 9° may, however, go still further. Since in connection with
                simultaneous extension and torsion higher friction is caused, load is
                measured with a special dynamometer; the deformation measurements by
                the dynamometer may be made according to various principles (Ref 1).
                There are 2 figures and 1 Soviet reference.

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Device for Testing Simultaneous Extension and Torsion   SOV/32-25-6-46/53

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina
                 Leningrad Polytechnic Institute imeni M. I. Kalinin)

Card 2/2

S/032/61/027/011/014/016
B104/B138

AUTHORS: Yagn, Yu. I., Myakinin, L. V., and Kovalov, K. F.

TITLE: An instrument for measuring transverse strain by means of
           wire-suspended mirrors

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 11, 1961, 413 - 414

TEXT: The authors point out the shortcomings of a device for determining
reduction of area in the plastic range in tensile-tested material. This
device had been developed by N. N. Aistov (Eksperimentalnoye opredeleniye
otnosheniya otnositel'nykh poperechnykh k otnositel'nykh prodol'nym
deformatsiyam v plasticheskoy zone (Experimental determination of the rela-
tive transverse-to-longitudinal strain ratio in the plastic region).
Nauchnyye Trudy Leningradskogo inzhenerno-stroitel'nogo instituta, no. 13
(1952)). The authors of the present paper suggest the arrangement shown in
Fig. 2. In this, two mirrors (1) and (2) are attached to rods (3) and (4)
which are suspended on capron wires. The levers (7) and (8) are supported
on hinge (0) and are depressed edge-on to the specimen (5) by means of rubber
band (6). The whole arrangement is suspended on cord (10). Any slight

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S/032/61/027/011/014/016
B104/B138

An instrument for measuring .

change in the diameter of the specimen is transmitted to the mirrors by the
lever system. The weights (9) attached to the mirrors are immersed in oi,
in order to avoid rotation or oscillation of the mirrors. This instrument.
which proved good in practice, was found to have a 12.500 magnification
factor in indicating recording the change in diameter. Its great advantage
is that its component parts cannot suffer deformation. There are 2 figures
and 4 Soviet references.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im M I Kalinina
(Leningrad Polytechnic Institute imeni M I Kalinin)

Fig. 2 Schematic representation of the suggested device

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BAZHIN, A.; NORKIN, I., zasypshchik domennoy pechi; GULIN, G.;
MYAKININ, M.; ZOLOTAREV, B.

Equal possibilities but different results. Okhr. truda i
sots. strakh. 5 no.7:32-33 Jl '62.   (MIRA 15:7)

1. Predsedatel' tsekhkoma domennogo tsekha metallurgicheskogo
kombinata imeni Serova (for Bazhin). 2. Vneshtatnyy tekhnicheskiy
inspektor Sverdlovskogo oblastnogo soveta professional'nykh
soyuzov (for Gulin). 3. Predsedatel' komissii okhrany truda
zavodskogo komiteta Bogoslovskogo alyuminiyevogo zavoda (for
Myakinin). 4. Spetsial'nyy korrespondent zhurnala "Okhrana
truda i sotsial'noye strakhovaniye" (for Zolotarev).
          (Sverdlovsk Province--Work clothes)

PUCHKOVSKIY, V.V., dotsent, kand.tekhn.nauk; MYAKININ, Ye.G., inzh.

Role of the third harmonic in the voltage test curve. Izv.vys.
ucheb.zav.; energ. 2 no.12:25-29 D '59.   (MIRA 13:5)

1. Chelyabinskiy institut mekhanizatsii i elektrifikatsii
sel'skogo khozyaystva. Predstavlena kafedroy proizvodstva
i raspredeleniya elektricheskoy energii v sel'skom khozyaystve.
          (Electric insulators and insulation--Testing)

MYAKININ, Ye.G., kand. tekhn. nauk; NIZAMUTDINOV, R.G., inzh.; SHATROV, M.A., inzh.

Temperature condition of a compounding process. Elektrotekhnika 35 no.12:50-57 D '64.
(MIRA 18:4)

VOLODIN, M.N., inzh.; MYAKININ, Ya.G., inzh.; PUCHKOVSKIY, V.V., dotsent,
      kand.tekhn.nauk

Breakdown of the sleeve insulation of electric machinery subjected to
the action of a nonsinusoidal voltage. Izv.vys.ucheb.zav.; energ. 4
no.4:18-24 Ap '61.   (MIRA 14:5)

1. Chelyabinskiy institut mekhanizatsii i elektrifikatsii sel'skogo
khozyaystva. Predstavlena kafedroy proizvodstva i raspredeleniya
elektricheskoy energii.
    (Electric machinery) (Electric insulators and insulation)

PUCHKOVSKIY, V.V., kand.tekhn.nauk; MYAKININ, Ye.G., inzh.

Mechanism of the breakdown of insulation in electrical
machines. Izv.vys.uchet.zav.; energ. 5 no. 8:29-35 Ag '62.
(MIRA 17:7)

1. Chelyabinskiy institut mekhanizatsii i elektrifikatsii
sel'skogo khozyaystva. Predstavlena kafedroy proizvodstva i
raspredeleniya elektricheskoy energii.

PUCHKOVSKIY, V.V.; MYAKININ, Ye.G.

Thermal breakdown of a two-layer dielectric. Inzh.-fiz.zhur. 5
no.9:33-37 S '62.   (MIRA 15:8)

1. Institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva,
Chelyabinsk.
                        (Dielectrics)

L 13266-66   EWP(e)/EWT(m)/T/EWP(b)   WH

ACC NR: AR6001442

UR/0195/65/000/009/I005/I005
UDK 621.3.048.1

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 9I33

AUTHOR: Myakinin, Ye.G.

TITLE: The mechanism of breakdown and the strength of electric machine insulation at a combination voltage

CITED SOURCE: Sb. Proboy dielektrikov i poluprovodnikov. M.-L., Energiya, 1964, 144-148

TOPIC TAGS: insulating material, electric insulation, electric breakdown, electric motor

TRANSLATION: The testing of insulating materials and electrical machine insulators with a nonsinusoidal voltage and various frequency voltage indicates that breakdown is determined by the voltage amplitude, and not by the thermal process in the insulation. With an increase in the a-c component part in the ripple voltage a decrease in the electrical strength of insulation takes place. 4 figures and 4 references.
F. Goryainov

SUB CODE: 09

Card 1/1

33115
S/638/61/001/000/042/056
B108/B138

24 6600

AUTHORS: Konstantinova, M. P., Myakinin, Ye. V., Romanov, A. M.,
            Tsareva, T. V.

TITLE: Angular distribution of protons from $C^{12}(\alpha,p)N^{15}$ with
            14.5-Mev alphas

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy
            energii. Tashkent, 1959. Trudy. v. 1. Tashkent, 1961,
            262-267

TEXT: A study of the angular distribution of protons from (α,p) reactions
may give insight into the direct interaction between alphas and nucleons.
The authors studied the $C^{12}(\alpha,p)N^{15}$ reaction with alpha particles of an
energy of 14.5 Mev, obtained from the cyclotron at the Physicotechnical
Institute (see Association entry). The target consisted of a gold foil
(0.25 mg/cm^2) covered with a thin layer of carbon black. The differential
cross section of the above reaction with N^{15} in the ground state was
determined from the histograms of the proton tracks (Fig. 3). The overall
error was about 10%. Experiments with a carbon target without gold

Card 1/3

33115
S/638/61/0C1/000/042/056

Angular distribution of protons...   B108/B138

backing showed that in the range 20-40° (lab system) the cross section
increases rather more with decreasing angle than was expected by theory.
The results indicate that the principal direct interaction process in the
case considered is the "knocking-out" of protons from the nucleus by
alphas. Best agreement of experimental and theoretical data was reached
when the interaction radius was assumed to be equal to $4.8 \cdot 10^{-13}$ cm. The
somewhat high theoretical values of the cross section in the range
60-130° (c.m.s.) are due to the assumption that the incident and
departing particles do not interact with the nucleus. The increase in the
reaction cross section in the range 140-170° may be regarded as confirma-
tion of the stripping of heavy particles. The anisotropic character of
the angular distribution is also conserved when the energy of the alpha
particles decreases. This speaks in favor of direct interactions playing
the main part in the $C^{12}(\alpha,p)N^{15}$ reaction at the energy under considera-
tion. There are 3 figures and 11 non-Soviet references. The four most
recent references to English-language publications read as follows:
Butler S. T. Phys. Rev., 106, 272, 1957; Pieper G. F., Heydenburg N. P.
Phys. Rev., 111, 264, 1958; Kerlee D. D. et al. Phys. Rev., 107, 1343,
1957; Igo G., Thaler R. M. Phys. Rev., 106, 126, 1957.
Card 2/3

33115
S/638/61/001/000/042/056
B108/B138

Angular distribution of protons ...

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR (Physicotechnical
               Institute AS USSR)

Fig. 3. Angular distribution of protons from $C^{12}(\alpha,p)N^{15}$ at alpha energy
14.5 Mev. Legend: abscissa - differential reaction cross sections.
(1) Calculated, (2) experimental.
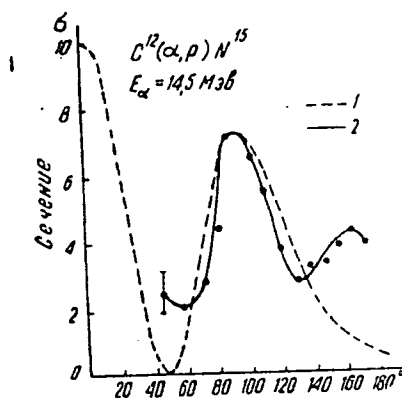
Card 3/3

TSAREVA, T.V.; ROMANOV, A.M.; MYAKININ, Ye.V.; KONSTANTINOVA, M.P.

$C^{12}(\alpha,p)N^{15}$ reaction of 13,6 Mev. alpha particles. Izv. AN Uz. SSR.
Fiz.-mat. nauk no.1:84-85 '61.   (MIRA 14:3)

1. Fiziko-tekhnicheskiy institut AN SSSR.
            (Alpha rays)   (Nuclear reactions)

ROMANOV, A.M.; MYAKININ, Ye.V.; KONSTANTINOVA, M.P.

Ne^{2} levels excited in the reaction F^{19} (α, p)Ne^{22}.
Izv. AN SSSR. Ser. fiz. 25 no.9:1135-1137 '61.
(MIRA 14:8)

1. Fiziko-tekhnicheskiy institut AN SSSR.
                    (Neon--Isotopes)
                    (Nuclear reactions)

KONSTANTINOVA, M.P.; MYAKININ, Ye.V.; ROMANOV, A.M.; TSAREVA, T.V.

Elastic scattering of 10 - 15 mev. α-particles on gold and aluminum.
Zhur.eksp.i teor.fiz. 41 no.1:49-51 Jl '61.　　　　(MIRA 14:7)

1. Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.
(Alpha rays—Scattering)　　(Cyclotron)

ROMANOV, A.M.; MYAKININ, Ye.V.; KONSTANTINOVA, M.P.

Excited levels of Ne^{22}. Zhur.eksp.i teor.fiz. 41 no.1:64-65 Jl
'61.   (MIRA 14:7)

1. Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.
   (Neon—Isotopes)   (Nuclear reactions)   (Protons—Spectra)

S/903/62/000/000/005/044
B102/B234

AUTHORS: Tsareva, T. V., Romanov, A. M., Myakinin, Ye. V.,
              Konstantinova, M. P.

TITLE: The (α,p)-reaction on carbon and the anomalies arising at
              α-particle energies of 10 - 15 Mev

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy.
              Vtoroy Vsesoyuznoy konferentsii, iyul' 1960 g. Ed. by
              A. S. Davydov and others. Moscow, Izd-vo AN SSSR, 1962, 123-132

TEXT: The reaction $C^{12}(\alpha,p)N^{15}$ was investigated with the aim of determining
the role of the various possible mechanisms of direct interaction and the
reaction $Al^{27}(\alpha,p)Si^{30}$ in order to obtain data on the high energy levels of
Si^{30} and on the role of the direct mechanism in Si^{30} formation in the ground
and first excited states. The experiments were made with the α-beam of the
cyclotron of the FTI AN SSSR with 100-μ Я-2 (Ya-2) emulsion plates and
targets enclosed in a spherical brass chamber (500 mm diam). The angular
distribution measurements were made in the intervals 10-50, 50-90, 80-140
and 130-170° (lab system). The proton angular distributions for the $C^{12}(\alpha,p)$
Card 1/3

The (α,p)-reaction on...

S/903/62/000/000/005/044
B102/B234

reaction were made with soot targets on 0.25 mg/cm^2 gold foils and a 120μ Al filter which served for eliminating the elasticity scattered alphas and the proton groups corresponding to formation of N^{15} nuclei in excited states. The experimental results are compared with theoretical considerations based on the formula for $d\sigma/d\Omega$ derived by Austern et al. (Phys. Rev., 92, 350, 1953), the wave vector of the recoil nucleus is determined from the masses and the wave vectors of the particles involved. The theoretical curve describes qualitatively the angular distribution measured. The Si^{30} levels excited in (α,p) reactions are determined and compared with published data (Proc. Phys. Soc., 73, 793, 1959; Bull. Amer. Phys. Soc., 1, 280, 1956; Phys. Rev., 76, 624, 1949). The results are given in the table. Also the angular distribution of the protons from the reaction $Al^{27}(\alpha,p)Si^{30}$ was determined; the Al target foils were 0.5 mg/cm^2 thick and were exposed to long-time bombardment. The reaction cross section in the interval 40-120° was almost independent of the angle and lay between 15 and 20 $\mu b/steradian$ (E_α = 14.7 Mev). The shape of the angular distribution in the interval 50 - 140° was only weakly dependent on E_α. The distribution

Card 2/3

The (α,p)-reaction on...

$d\sigma/d\Omega = f(\Theta_{c.m.s.})$ has three maxima which are more distinctly marked in the case of $E_\alpha = 14.7$ Mev than with $E_\alpha = 10.4$ Mev. They are at about 20, 80 and 160°. There are 6 figures and 1 table.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut AN SSSR (Leningrad Physicotechnical Institute AS USSR)

Card 3/3

S/903/62/000/000/005/044
B102/B234

no.	E, Mev
1	2,28±0,05
2	3,50±0,06
3	3,62±0,06
4	4,80±0,06
5	5,30±0,06
6	5,48±0,06
7	5,70±0,06
8	6,08±0,07
9	6,68±0,07
10	7,06±0,07
11	7,40±0,08
12	7,76±0,08
13	8,44±0,09
14	8,80±0,10
15	9,36±0,10
16	9,70±0,10 (?)
17	9,96±0,10
18	10,60±0,10
19	11,06±0,10

L/058/62/043/002/006/053
B102/B104

AUTHORS: Konstantinova, M. P., Myakinin, Ye. V., Petrov, A. M.,
             Romanov, A. M.

TITLE: Angular distributions of protons from (α,p)-reactions induced
             by alpha particles of 13-15 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
             no. 2(8), 1962, 388 - 393

TEXT: To study the mechanism of (αp) direct interaction, the authors
determined the energy and angular distributions of protons from the
reactions $Li^6(\alpha,p)Be^9$, $Li^7(\alpha,p)Be^{10}$, $F^{19}(\alpha,p)Ne^{22}$, and $Al^{27}(\alpha,p)Si^{30}$ at
E_α = 13-15 Mev. The experimental arrangement was the same as that de-
scribed in ZhETF, 39, 1540, 1960. The charged particles were recorded by
Я -2 (Ya-2) nuclear emulsion plates. The plates were arranged so as to
comprise the angle intervals 10-50, 50-90, 80-140, and 130-170°. In the
c.m.s. all angular distribution curves $\sigma(\theta)$ show: (1) several maxima and

Card 1/2

Angular distributions of protons ...   S/056/62/045/002/006/099
                                                        B102/B104

minima; (2) asymmetry with respect to θ = 90°; and (3) an increase of σ
for large proton emission angles (θ ∠ 120°). These results agree with those
of analogous reactions at E_α = 18-40 Mev. The characteristic features of

the σ(θ) curves indicate the importance of direct interaction between

nucleus and α-particles. The residual nuclei of the reactions

$F^{19}(\alpha,p)Ne^{22}$ and $Al^{27}(\alpha,p)Si^{30}$ at E_α = 13-15 Mev are mainly in the excited

state. The intensity of the p_0 proton group $(Li^6(\alpha,p)Be^9; Li^7(\alpha,p,)...)$ is

less than that of the p_1 and p_2 groups $(F^{19}(\alpha,p)Ne^{22}; Al^{27}(\alpha,p)Si^{30})$. The

p_2 angular distribution of the F^{19} reaction does not contradict the

assumption that the second excited level in Ne^{22} is a 2^+ level. There are
6 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk
             SSSR (Physicotechnical Institute imeni A. F. Ioffe of the
             Academy of Sciences USSR)

SUBMITTED: February 23, 1961

Card 2/2

AUTHORS: Bel'skiy, S. A., Myakinin, Ye. V., Petrov, A. M.,
             Romanov, A. M., and Yur'yev, V. V.

TITLE: The energy transfer to the wall of the discharge chamber in
             the "Alpha" machine

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 33, no. 2, 1963, 212 - 213

TEXT: The energy was measured with integral-type semiconductor and wire
bolometers connected to a measuring bridge. The vacuum in the hydrogen
plasma was $5 \cdot 10^{-5}$ - $2 \cdot 10^{-3}$ mm Hg. The energy measured by the detectors
rises monotonically with the voltage at the discharge capacitor battery.
This dependence is slightly less than in accordance with a square law.
Experiments with scintillation and boron counters and with a $CaSO_4$-Mn

thermo-luminophor showed that the energy transferred to the wall by short-
wave electromagnetic radiation is not more than 10% of the plasma energy.
A larger part of energy lost to the walls must be due to other processes
(neutral particles; ZhTF, 30, 12, 1419, 1960).

SUBMITTED: April 9, 1962
Card 1/1

L 2140-66   FSS-2/EWT(1)/FS(v)-3/EWA(d)   TT/GW

ACCESSION NR: AP5026236   UR/0048/65/029/010/1942/1945

AUTHOR: Yefimov, Yu. Ye.; Myakinin, Ye. V.; Romanov, A. M.; Shalak, N. I.; Yur'-
yev, V. V.

TITLE: Investigation of low-energy charged particles with the Cosmos 12, Cosmos
15, and Electron 2 satellites /Report, All-Union Conference on Cosmic Ray Physics
held at Apatity 24-31 August 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 10, 1965, 1942-1945

TOPIC TAGS: secondary cosmic ray, cosmic ray particle, fast neutron, slow neutron,
atmospheric phenomenon

ABSTRACT: The authors have measured slow and fast neutron fluxes in the atmosphere
at equivalent depths from about 7 to over 700 g/cm^2. The fast neutron fluxes were
measured with a proportional counter surrounded by a moderator and also with a
stilbene scintillation counter which recorded neutrons with energies above 2.5 Mev.
To avoid recording charged particles, the stilbene counter was surrounded with plas-
tic scintillation counters connected in anticoincidence. The slow neutron fluxes
were measured with BF$_3$ counters, some of which had been enriched in B^{10}, and also

Card 1/3

L 2140-66

ACCESSION NR: AP5016236

with In foils. The foils were exposed in stacks of three and were shielded either above or below with Cd, so that it was possible to distinguish the portion of the induced activity due to resonance neutrons (energies between 1.35 and 1.65 ev) and separately to measure the upward and downward fluxes. At latitude 57°N and atmospheric depths from 78 to 94 g/cm^2 (the region of maximum intensity) the upward and downward fluxes of resonance neutrons were found to be the same and equal to (3.63 ± 0.83) x 10^4 neutron/cm^2 sec mev. This flux is in good agreement with the calculations of W.H.Hess, E.H.Canfield, and R.E.Lingenfelter (Geophys. Res., 66, 665, 1961) for geomagnetic latitude 44° N. Data on fast neutron fluxes are given for 9 flights in 1962, 1963, and 1964 at latitudes 47° and 57°N. The atmospheric depth for maximum intensity ranged from 80 to 105 g/cm^2, and the absorption mean free path ranged from 147 to 172 g/cm^2. Comparison of the proportional counter and scintillation counter data indicates that the atmospheric depth for maximum intensity increases with increasing neutron energy. The fast neutron flux at maximum was found to be 2 neutron/cm^2 sec; this flux is considerably greater than that found by R.R.Mendell and S.A.Korff (J. Geophys. Res., 68, 5487, 1963) and by R.F. Miles (J. Geophys. Res., 69, 1277, 1964). The maximum flux of the slow neutrons as measured with the BF$_3$ counters occurred at an atmospheric depth of 90 g/cm^2, and the density of slow neutrons (energies below 10 kev) at this altitude was

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L 2140-66

ACCESSION NR: AP6026236

3

found to be 3.2×10^{-7} cm^{-3}. This density agrees within a factor of 2 with the cal-
culations of R.E.Lingenfelter (J. Geophys. Res., 68, 5633, 1963). "The authors are
grateful to V.T.Barsukov, R.R.Ivanov, and D.V.Frederiks for assistance with the
work." Orig. art. has: 4 figures and 1 table.

[15]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: NP, ES

NO REF SOV: 001

OTHER: 006

ATD PRESS: 4/23

Card 3/3

MYAKIN'KOV, B. V.

Operation of the new stadium.   Gor. khoz. Mosk. 30 no.9:
16-17 S '56.   (MLRA 9:12)

1. Zamestitel' direktora TSentral'nogo Moskovskogo stadiona
imeni V.I. Lenina.
                        (Moscow--Stadiums)

PHASE I BOOK EXPLOITATION   SOV/5292

Konferentsiya po elektronike sverkhvysokoy chastoty

Trudy (Transactions of the Conference on Superhigh-Frequency Elec-
tronics) Moscow, Gosenergoizdat, 1959. 271 p. 3,500 copies
printed.

Sponsoring Agency: Vsesoyuznyy nauchnyy sovet po radiofizike i radio-
tekhnike AN SSSR.

Eds. (Title page): I. S. Dzhigit, Professor, and Ye. G. Solov'yev,
Candidate of Technical Sciences; Ed.: S. Akalunin; Tech. Ed.:
O. Ye. Larionov.

PURPOSE: This book is intended for scientific and technical personnel
concerned with the development and operation of superhigh-frequency
devices.

COVERAGE: The book contains a number of papers dealing with the more
important problems of superhigh-frequency electronics. The papers
were submitted at the Conference on Electronics called by the
Vsesoyuznyy nauchnyy sovet po radiofizike i radiotekhnike AN SSSR
(All-Union Scientific Council for Radiophysics and Radio Engineer-
ing, AS USSR) and the Byuro novoy tekhniki MO SSSR (Bureau of
Modern Engineering, Ministry of Defense, USSR) and held in Moscow
in 1957. The reports deal with the following topics: problems
of the theory and calculation of the delay systems of traveling-
wave and backward-wave tubes; certain phenomena occurring in a
cylindrical electron beam finding itself in a uniform magnetic
field; the focusing of long beams by means of periodic magnetic
and electric fields; and some problems concerning reflex klystrons.
Modern types of cathodes for superhigh-frequency devices are de-
scribed. No personalities are mentioned. References accompany
most of the reports.

MYAKINNIKOV, N.A.

Simplified graphic method for finding the directions of projecting
and the indices of distortion. Trudy MIIT no.190:188-197 '65.

(MIRA 18:8)

MYAKININIKOV, N.A., kand.tekhn.nauk; KURDIN, G.K., inzh.; GRODETSKIY, I.A., inzh.

Device for measuring slopes. Transp.stroi. 8 no.4:30-31 Ap '58.   (MIRA 12:12)
          (Level(Tool))

BAGDASAROV, A.G.; MYAKINNIKOV, N.A.

Apparatus for locating the line of least resistance in determining the weight of an explosive charge. Gor.zhur. no.5:38-39 My '60.
                                                                    (MIRA 14:3)
                        (Explosives)

MYAKINNIKCVA, M. V.

"A Comparative Evaluatio of Sur·i·al, Con:erv·t·ve, an· C·mbi·ed Meth·s of Treating Scleromal Affections of the Nose, Nasopharynx, and Pharynx." Cand Med Sci, Minsk State Medical Inst, 6 Jan 55. (SB, 26 Dec 54)

Survey of Scientific an· Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

MYAKINNIKOVA, M.V.,kand.med.nauk

Treatment of scleromatous diseases in the nasopharynx [with sum-
mary in English] Vest.oto.-rin. 20 no.3:71-73 My-Je '58 (MIRA 11:6)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - doktor med.nauk
N.P. Kniga) Minskogo meditsinskogo instituta.
          (NASOPHARYNX, dis.
               scleromatous, postop. radiother. (Rus))
          (RADIOTHERAPY, in various dis.
               postop, x-ray in scleromatous dis. of nasopharynx
               (Rus))
          (RHINOSCLEROMA, therapy
               x-rays (Rus))

MYAKIMNIKOVA, M.V., kand.med.nauk

Late results of embichin treatment of scleroma [with summary in English].
Vest.oto-rin. 20 no.6:74-77 N-D '58   (MIRA 11:12)

1. Iz kliniki bolezney ukha,gorla, i nosa (zav. - doktor
meditsinskikh nauk N.P. Kniga) Minskogo meditsinskogo instituta.
                (RHINOSCLEROMA, ther.
                        N-bis (2-chloroethyl)-2-chloropropylamine, remote
                        results (Rus))
                (NITROGEN MUSTARDS, ther. use
                        N-bis (2-chloroethyl)-2-chloroprooylamine, remote
                        results (Rus))

MYAKINNIKOVA, M.V., kand.med.nauk

Tympanoplasty following chronic suppurative otitis. Zdrav. Belor.
5 no.10:40-42 O '59.   (MIRA 13:2)

1. Iz kafedry bolezney ukha, gorla i nosa (zaveduyushchiy - prof.
N.P. Kniga) Minskogo meditsinskogo instituta.
            (EAR--DISEASES)   (TYMPANIC MEMBRANE--SURGERY)

MYAKINNIKOVA, M.V., kand. med. nauk.

Osteomas of the paranasal simuses. Vest. otorin 21 no.2:41-43 Mr-Ap '59.
(MIRA 12:4)

1. Iz kliniki boleznsy ukha, gorla i nosa (zav. - doktor med. nauk
.P. Kniga) Minskogo meditsinskogo instituta.
(PARANASAL SINUSES, neoplasms,
osteoma (Rus))
(OSTEOMA, case reports,
paranasal simuses (Rus))

MYAKINNIKOVA, M.V.

      Work of the White Russian Otolaryngological Society for 1959.
      Zdrav. Belor. 6 no.6:76-77 Je '60.   (MIRA 13:8)
          (WHITE RUSSIA—OTOLARYNGOLOGICAL SOCIETIES)

MYAKINNIKOVA, M.V., kand.meditsinskikh nauk; MELYANYUK, M.A., vrach

Case of foreign bodies in the esophagus. Zdrav. Belor. 6 no.8:72
Ag '60.   (MIRA 13:9)

1. Iz kliniki bolezney ukha, gorla i nosa (zaveduyushchiy - professor
N.P.Kniga) Minskogo meditsinskogo instituta.
               (ESOPHAGUS—FOREIGN BODIES)

MYAKINNIKOVA, M.V., kand.med.nauk; FAYNSHTEYN, B.A., zasluzhennyy vrach
BSSR

Removal of a foreign body from the bronchi under the control of
X rays. Zdrav. Bel. 6 no.12:57 D '60.   (MIRA 14:1)

1. Iz kliniki bolezney ukha, gorla i nosa Minskogo meditsinskogo
instituta.
            (BRONCHI—FOREIGN BODIES)

MYAKINNIKOVA, M.V., kand.med.nauk; LEVINA, R.I.

Materials from a study of microfoci of scleroma in Minsk. Zhur.
ush., nos.i gorl.bol. 22 no.2:47-50 Mr-Ap '62.   (MIRA 15:11)

1. Iz kafedry bolezney ukha, gorla i nosa (zav. - prof. N.I.Kniga)
Minskogo meditsinskogo instituta i Belorusskogo nauchno-issledovatel'-
skogo sanitarno-gigiyenicheskogo instituta.
(MINSK---RHINOSCLEROMA)

KNIGA, N.P., prof.; MYAKINNIKOVA, M.V., dotsent

Sixth Scientific Conference of Otorhinolaryngologists of
White Russia. Vest. oto-rin. 25 no.4:100-104 Jl-Ag '63.
                                        (MIRA 17:1)

VOROB'YEV, A.I.; KOSTYSHEV, N.M. (Novosibirsk); MYAKISH, N.N., inzh.
(Novosibirsk)

Experience in mechanized track testing. Put' i put.khoz. 7
no.12:8-11 '63.   (MIRA 16:2)

1. Rukovoditel' puteispytatel'noy laboratorii Novosibirskogo
instituta inzhenerov zheleznodorozhnogo transporta (for
Vorob'yev).

MYAKISHEV, B.K.

Polygraph; appliance for photoregistration of oscillations of venous pressure and other volumes. Klin.med.,Moskva 29 no.1: 69-74 Jan '51.   (CLML 20:5)

1. Of the Faculty Therapeutic Clinic (Head--Prof.V.A.Val'dman, Honored Worker in Science), Leningrad State Pediatric Medical Institute.

MYAKISHEV, B.K. (Leningrad)

Thermographic observations in fever. Klin.med. 34 no.6:69-73
Je '56.
(MIRA 9:10)

1. Iz fakul'tetskoy terapevticheskoy kliniki (zav.-zasluzhennyy
deyatel' nauki prof. V.A.Val'dman) Leningradskogo gosudarstvennogo
pediatricheskogo meditsinskogo instituta (dir. - prof. N.T.Shutova)
    (FEVER, physiology,
        thermography (Rus))

MYAKISHEV, B.K., kand.med.nauk; IOFFE, Ya.G.

Phonocardiography. Vop.pat.krovi i krovoobr. no.6:46—59 '61.

(MIRA 16:3)

(HEART—SOUNDS)

MYAKISHEV, B.K., kand.med.nauk; KOROLEV, Yu.V.

Vectorcardiographic observations. Vop.pat.krovi i krovoobr.
no.6:60-72 '61.   (MIRA 16:3)
                        (VECTORCARDIOGRAPHY)

MYAKISHEV, B.K., kand.med.nauk; BELOBORODOVA, N.M.

Changes in venous pressure in coronary disease. Vop.pat.krovi
i krovoobr.   no.6:159-165 '61.   (MIRA 16:3)
        (CORONARY HEART DISEASE)   (BLOOD PRESSURE)

MYAKISHEV, B.K., dotsent, KIROLAV, Yu.V.

Clinical evaluation of the electric position of the heart and its hyper-
trophy according to vectorcardiographic data. Trudy LPMI 31 no.2:265-
280 '63.   (MIRA 17:10)

1. Iz kafedry fakul'tetskoy terapii Leningradskogo pediatricheskogo
meditsinskogo instituta.

MYAKISHEV, B K., d

Interrelation of and graphic method of Trudy

3. Iz kafedry fakul'tetskoy terapii Leningradskogo pediatricheskogo meditsinskogo instituta.

88-58-98-2/4

AUTHOR: **Myakishev, B.Ya.,,Engineer**

TITLE: Investigation of the Reflective Properties of Ribbed Surfaces Obliquely Irradiated by a Plane Electromagnetic Wave)

PERIODICAL: Trudy Moskovskogo aviatsionnogo instituta, 1958, Nr 98, Problems in Superhigh-frequency Radio Engineering and Electronics (Voprosy radiotekhniki i elektroniki sverkhvysokikh chastot) pp 5-30 (USSR).

ABSTRACT: The article investigates reflective properties of a periodic structure. It studies problems of image beam suppression and preservation of side beams of maximum power. It is stated that if a plane electromagnetic wave is incident on a periodically irregular surface at some angle, then the reflected field contains not only the image beam but also a series of side beams whose number and direction of reflection is determined by the period

Card 1/8

88-58-98-2/4

Investigation of the Reflective Properties (Cont.)

of surface irregularity, the incident wavelength, and the angle of incidence.   The profile of the irregular surface and the system of coordinates are shown in Fig. 1, p.5. The author explains that the reflection angles and the width of the reflected field depend on the ratio of λ/T where λ is the incident wavelength and T is the period of surface irregularity. The ribbed surfaces used in practice have the value of the period of surface irregularity comparable to the incident wavelength and hence the groove depth is not a small quantity. It is important, therefore, to consider multiple reflections. The theory of such ribbed surfaces can be developed then only when the problem of the electrodynamic properties of ribbed surfaces is solved. This was done by L.N. Deryugin in his doctor's dissertation. The system of equations obtained in his work serves as a basis for the derivation of the reflection coefficient equations in this article. The author derives equations of reflection coefficients and fields

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88-58-98-2/4

Investigation of the Reflective Properties (Cont.)

in grooves by two methods. He explains that in the first method the equations of the electric and magnetic fields of the incident wave in the upper half of the plane are derived and the expressions for the fields in grooves are then determined. In the second method the equations of the fields in grooves are derived first and are then determined for the upper half of the plane. The expression for calculating the field is given by equation 23 on p.10. The final expressions for the amplitude reflection coefficients are given by equation 31, p.11. On p.13 an example of field calculation is tabulated. On p.14 the author derives an equation for the optimum depth of grooves (equation 38). Equations 39 and 40 are expressions for the magnetic field and power reflection coeffic- ients, respectively. Fig. 2, p.15,shows a graph of power reflec- tion coefficients versus angle of incidence at k=0.8, where k is the relative period of surface irregularity expressed as T/λ . Fig. 3, p.16, shows the relation of the reflection coefficients

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Investigation of the Reflective Properties (Cont.)

of the image and the first side beams to the relative period of irregularity, k, at the incident angles of 60° and 80° for narrow grooves. Fig. 4, p.16, is a graphical representation of the relationship between reflection coefficients and k at φ =60° for narrow grooves. The author explains that in previous work the numerical calculations of power reflection coefficients, ampli-tudes of electric and magnetic fields in grooves, and beam phase-angles in the upper half plane were made. The fields in grooves were computed on the basis of the electrical depth of grooves in degrees. On the basis of the results obtained a number of graphs were drawn which appear in Fig. 5, p.17. The graphs show the relationship between the maximum and minimum power of reflection coefficients (W_n), optimum depth of grooves(kh), and relative period of surface irregularity (k). Graph (a), Fig. 5, was constructed for the angle of incidence φ =60° and α =0.25 where α is the relative width of grooves and is determined by the ratio of groove width to the period of surface irregularity. Graph (b), Fig. 5, was drawn for φ =60° and α =0.5. Similarly, graphs (v) and (g) were constructed for φ =80°, α =0.25 and φ =80°, α =0.5, respectively. The author

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Investigation of the Reflective Properties (Cont.) 88-58-98-2/4

explains that for the derivation of equations when the incident
wave is longitudinally polarized, a method similar to that discussed
in the preceding paragraphs is used. It is noted, however, that
there is no zero wave in the grooves with longitudinal polarization.
It is explained that the data for the graphs similar to those given
on page 17 were determined in previous work. The graphs and the
data, however, do not appear in the article. The theoretical
calculations mentioned in the preceding paragraph were checked
experimentally. In the theoretical part the following approxima-
tions were made: a finite number of waves was used when the
reflection coefficients were determined, the grating was considered
to be indefinite in length, i.e., edge effects were neglected, and
lossless.   Amplitude and phase irregularity in the plane of grating
was also neglected. A grating with a provision for smooth change
of groove depth and sudden change of groove width was built. The
construction diagram is shown in Fig. 6, p.22. For surface
irregularity and groove width change, aluminum plates of 1,2, 4, and
10 mm.were used. The relative period of surface irregularity was

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Investigation of the Reflective Properties   (Cont.)   88-58-98-2/4

changed from 0.5 to 1.6 and the relative groove width from 0.1 to 1 when the oscillator wavelength was from 3.08 to 3.4 cm. The grating plane of reflection was 320 x 200 mm. The size of grating in the X direction (see Fig. 1) was equal to 10 λ. A 51-I-type oscillator, 28IM-type amplifier, and four horns of 200 x 160 and 200 x 60 were used. The horns irradiated the grating at 60° and 80° angles. The experiment confirmed that the field of the wave incident on the surface of the grating is uniform in phase. The plates were made with an accuracy of $\pm$ 0.1 mm, thus making it possible to measure the reflection coefficients with an error no greater than 3-4%. The total experimental error was estimated to be 10-15%. Fig. 7, p.24, shows the relationship between the experimental reflection coefficients and the depth of grooves at φ =60°, k=1, and α =0.5. Fig. 8, p.24, gives diagrams comparing the variation of experimental and theoretical reflection coefficients with groove depth. The data for Fig. 8 (a) was taken at φ =60°, k=1.2, and α =0.5; for Fig. 8 (b) at φ =60°, K=1.4, and α =0.25. In conclusion the author states that:

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Investigation of the Reflective Properties (Cont.)   88-58-98-2/4

1. When two beams (0 and -1) are in the reflected field, the value of the image beam can be made very small so that number -1 beam will contain almost all the energy. The smallest image beam is obtained when the relative groove width is 0.5 and the groove depth is less than $\lambda/4$.

2. The directional diagrams of the -1 beam correspond to the diagram of the cophased array.

3. The amplitudes of the electric field of the first partial waves in grooves at α =0.5 exceed the amplitudes of the electric field of the incident wave by not more than 50%.

4. Groove phase-angle with capacitive input impedance is small. With inductive input impedance the phase angle is close to 180°.

5. If there are three reflecting beams in the reflected field, the image, 0, beam is small. The values of the other two are

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Investigation of the Reflective Properties (Cont.) 88-5c-98-2/4

equal. In the case of narrow grooves the second beam, -2, is larger than the first (-1). All these conclusions pertain to normal polarization of the incident waves.

6. In the case of parallel polarization the diffraction dispersion is much smaller, especially when the angles of incidence are large. The optimum depth of grooves is larger than $\lambda/4$.

In the Appendix the author derives formulas whose general expressions were used for deriving the reflection coefficient equations in section 3 of this article. The equations whose general expressions were used in section 3 of this article are simplified. There are 8 figures in the article. There are 4 Soviet sources (including 1 translation). No personalities are mentioned.

AVAILABLE: Library of Congress

JJP/ksv
10-8-58

Card 8/8

MYAKISHEV, B. Ya.

Authors' Certificates

SOV/106-59-2-10/11

I.A. Khraban - "A Method for the Separation of a Narrow-bandwidth, Weak Signal from Strong, Wide-spectrum, Background Noise"; N.P. Khvorostenko - "Resonance Amplifier Type of Oscillator with Shock Excitation"; L.N. Deryugin and B.Ya. Myakishev - "Diffraction, Reflecting, Side-radiation Antenna with a Controlled Polar Diagram Over a Wide Sector"; P.S. Seleznev and G.B. Glebovich - "Construction of a Magnetostriction Transducer for Magnetostriction Delay Lines"; L.G. Dorfman - "A Television Co-axial Separating, Bridge-type, Filter"; Ye.U. Badyr' - "Apparatus for Pulling a String along Pipes"; B.A.Barskiy and Ye.N. Kuzin - "A Differential Transformer or Choke for Measurement Bridges"; E.N. Ulanovskiy and Ye.V. Anurin - "Apparatus for Measurement of the Magnitude of the Reverse-current of Semiconductor Rectifier Elements"; Yu.A. Skripnik - "A Method for Determination of the Phase Angle Between Two Voltages and Apparatus for Realisation of this Method".

Elektrosvyaz', 1959, No. 2, p. 78

Card 2/2

$9, 1300 (1127)$

30746
S/535/60/000/125/008/008
E025/E335

AUTHOR: Myakishev, B. Ya.

TITLE: The resonance properties of a rectangular comb with oblique illumination

SOURCE: Moscow. Aviatsionnyy institut, Trudy. no. 125. 1960. Elektromagnitnyye zamedlyayushchiye sistemy; metodika izmereniya elektricheskikh kharakteristik. 104 - 125

TEXT: The reflecting properties of the periodic rectangular comb-type surface of Fig. 1 are studied when illuminated by an oblique beam at a very small angle of incidence when one or two lateral rays of the diffracted field slide along the reflecting surface. Deryugin's equations (Ref. 1 - Investigation of the electrodynamic properties of ribbed surfaces, Doctor Dissertation, MAI, 1954) are used in the analysis. The period of the surface unevenness equals the spatial period of the skimming waves resulting in phase addition giving a resonance character to the field. A plane transversely polarized electromagnetic wave ($\bar{E}$ perpendicular to the slots) is incident at an angle φ. The slots are assumed very narrow compared with the period and the

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The resonance properties . ..

S/535/60/000/125/008/008
E025/E335

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resonant properties are shown to be functions of the slot depth,
the period of the structure and the angle of incidence.
Expressions are derived for the amplitude of the field as a
function of all the parameters of the problem when skimming
occurs for only one ray. If $\tan \theta$ is not small, the expressions
simplify, the field-amplitudes are independent of the slot depth
and a simple surface resonance results, in which the amplitude of
the skimming wave is independent of the parameters and is double
the amplitude of the incident wave. The case of double resonance
which occurs for an optimum slot depth and gives maximum field
amplitudes is studied and field values are found for simultaneous
surface and slot-depth resonances when the fields sharply increase
in value. From the behaviour of the field amplitudes as functions
of slot depth in the region close to double resonance, it is shown
that the resonance field depends sharply on the slot depth, the
general shape of the resonance curve being similar to that for a
tuned circuit. The dependence of the field amplitudes on the
relative period and on the angle of incidence is studied and their
effect on the resonant field and on the characteristics of the

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The resonance properties ....

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E025/E335

resonant curve are described. A table is given summarizing the final results. The results were tested by experiments in the centimetre band. The apparatus shown in Fig. 6 enabled the depth and width of the slots to be varied; the angle of incidence was also varied. Although there is some discrepancy, the general picture given by the experimental results confirms the theory.

There are 9 figures, 2 tables and 2 Soviet-bloc references.

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L 13258-65   EWT(1)/EWT(m)   BSD/ASD(d)/AFTCB/ASD(a)-5/AFETR RAEM(a)/ESD(c)/
ACCESSION NR: AT4046243 ESD(gs)/ESD(t) S/2535/64/000/159/0301/0308

AUTHOR: Myakishev, B. Ya.; (Candidate of technical sciences)

TITLE: The absorption coefficient of ribbed reflectors

SOURCE: Moscow. Aviatsionny*y Institut. Trudy*, no. 159, 1964. Skaniruyushchiye antenny* sverkhvy*sokikh chastot (Super-high frequency scanning antennas), 301-308

TOPIC TAGS: antenna theory, frequency scanning, superhigh frequency, absorption coefficient, ribbed reflector

ABSTRACT: In the majority of papers dealing with the reflection of electromagnetic waves from ribbed metallic surfaces, the finite conductance of the reflector is not taken into consideration. In resonance reflectance modes, however, the field amplitudes on the surface attain large values and a significant portion of the incident energy is absorbed in the reflector. In the present article, a computation is made of the absorption coefficients on a ribbed surface of rectangular profile (see Figure 1 of the Enclosure), irradiated by a planar electromagnetic wave. For the determination of these coefficients, the authors employ the well-known approximation method in which the currents on the surface are calculated according to fields computed for infinite reflector conductance,

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with the ohmic losses caused by these currents then determined. An underlying
assumption is that the finite conductance of the material of which the reflector is
manufactured causes no distortions in the fields. The authors note that the method is
applicable to high-conductance surfaces, this being the situation normally encountered
in actual practice. A "coefficient of relative losses" is introduced for a comparison of
losses on a ribbed surface with losses on a smooth surface. Expressions are obtained
which make it possible to compute the absorption coefficient for any modes of
reflection. Examples are presented, illustrating the procedure for computing absorption
coefficients on a rectangular comb configuration in different modes. The field magni-
tudes, found on the supposition of infinite conductance of the reflector, are taken
from the literature. All the examples considered apply to a case of deep resonance
where the amplitudes of all fields (except the incident and the mirror-reflected) are
maximal. Double resonance with oblique radiation, and with normal incidence, on a
narrow-grooved lattice structure or array is discussed. As a result of the analysis
of several examples given in the article, it is established that in a general mode
thermal losses for lattice arrays with wide groves are small, and are to be taken
into account only in the case of narrow ($\alpha < 0.15$) grooves. In the double-resonance

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ACCESSION NR: AT4046243

mode, losses are small only in the case of rather wide grooves ($\alpha \geqslant 0.5$) and increase very rapidly as the grooves grow narrow. Orig. art. has: 1 table, 3 figures and 22 formulae.

ASSOCIATION: Moskovskiy aviatsionny*y institut (Moscow Aviation Institute)

SUBMITTED: 00   ENCL: 01   SUB CODE: EC

NO REF SOV: 005   OTHER: 000

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L 13258-65
ACCESSION NR: AT4046243   ENCLOSURE: 01
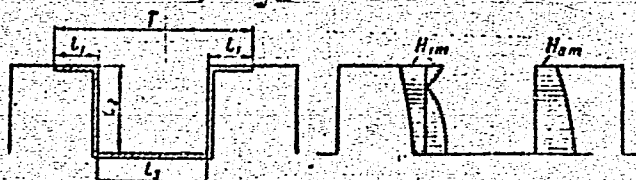
Fig. 1. Profile of ribbed surface.

Card 4/4

MYAKISHEV, G. YA.

PA 10/49T39

USSR/Electronics
    Oscillators, High-Frequency   Aug 48
    Vacuum Tubes

"The Theory of Electron-Ray High-Frequency Oscil-
lators," G. Ya. Myakishev, 5½ pp

"Zhur Tekh Fiz" Vol XVIII, No 8

Investigates propagation of modulations of charge
density, current and kinetic energy along an
electronic beam, caused by disturbance in a definite
location within beam. Treatment purely mathematical.
Submitted 26 Nov 47.

10/49T59

VASILIEV, L. Ya.

VASILIEV, G. Ya. -- "Some Problems of the Behavior of Plane and
Electron Beams in Electromagnetic Fields." Mos., 1956, of Lenin State imeni M. V. Lomonosov. (Dissertation for the Degree of Candidate in Physicomathematical Sciences).

SO: Vechernaya Moskva January-December 1956

USSR/Physics - Plasma oscillations, nonlinear

FD-1605

Card 1/1   : Pub. 129-8/23

Author   : Luchina, A. A., and Myakishev, G. Ya.

Title   : The structure of longitudinal oscillations of plasma
                     Vest-Mosk. Un. 9, No 12, pp 57-61, 1954

Abstract   : The authors remark that presently the theory of the propagation of waves
                     in plasma or in electron beams is being developed in the framework of
                     linear approximations, which is satisfactory in the case of longitudi-
                     nal waves in electron beams (i.e. for waves in high-frequency oscilla-
                     tors of the klystron type), as shown by the experimental works of A. A.
                     Zaytsev on the oscillations and traveling waves in gaseous discharge
                     (ibid. No 10, 1951; Doklady AN SSSR, No 5, 1951). In the present work
                     the author shows that the principle of superposition (i.e. linear the-
                     ory) can be applied to explain the phenomena of plasma oscillations, in
                     agreement with experimental results. Eight references (e.g. M. Ye. Ger-
                     tsenshteyn and V. Potemkin, Zhur. eksp. i teor. fiz. 24, 1953; G. Ya.
                     Myakishev. Dissertation, Moscow State University, 1952; A. A. Luchina,
                     Dissertation, Moscow State U, 1952).

Institution   : Chair of Theoretical Physics

Submitted   : May 4, 1954

Myakishev, G. Ya.

USSR/Physics - Plasma oscillations   FD-1885

Card 1/1   Pub. 146-5/21

Author   : Myakishev, G. Ya., and Luchina, A. A.

Title   : Longitudinal oscillations of plasma. II

Periodical : Zhur. eksp. i theor. fiz. 28, 26-37, January 1955

Abstract   : On the basis of the results of work I (preceding article in the same is-
              sue) the authors investigate the dispersive properties of the waves in
              various particular cases. They demonstrate that in the propagation of
              longitudinal waves in various tubes the motion of the ions in the major-
              ity of the cases possesses essential significance. They find the magni-
              tude of the spatial period and damping decrement as functions of the
              discharge parameters. They thank A. A. Zaytsev and V. N. Faddeyev.
              Fourteen references.

Institution: Moscow State University

Submitted : February 17, 1954

GRIGOR'YEV, Vladimir Ivanovich; MYAKISHEV, Gennadiy Yakovlevich;
    VEDES, L.F., red.

[The forces in nature] Sily v prirode. Moskva, Nauka,
1964. 366 p.   (MIRA 18:1)

MYAKISHEV, G.Ya., kandidat fiziko-matematicheskikh nauk.

　　　What is "heavy water." Nauka i zhizn' 23 no.6:63 Je '56.

(MLRA 9:9)

　　　　　　　(Deuterium oxide)

SUBJECT: USSR/Physics   25-4-16/34

AUTHOR: Myakishev, G.Ya., Candidate of Physico-Mathematical Sciences

TITLE: "Nature's Forces" (Sily v Prirode)

PERIODICAL: Nauka i Zhizn', April 1957, # 4, pp 40-43 (USSR)

ABSTRACT: Electromagnetic forces, nuclear forces, and the force of
             gravity are three basic forces nature is exercising. They are
             closely related to each other and manifest themselves in various
             ways in different circumstances. There is nothing mysterious
             or supernatural about these forces. They can be measured and
             described in their interactions, thus giving evidence of the
             physical unity of the universe.

             This article contains 6 illustrations.

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress.
Card 1/1

21(1)

                                                       SOV/55-58-6-10/31

AUTHORS: Grigor'yev, V. I., Myakishev, G. Ya.

TITLE: On Virtual and Real Transitions in the Quantum Theory
               (O virtual'nykh i real'nykh perekhodakh v kvantovoy teorii'

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki,
               astronomii, fiziki, khimii, 1958, Nr 6, pp 71-75 (USSR)

ABSTRACT: In the modern quantum theory two kinds of transitions are
investigated: the real and the virtual transitions. The vir-
tual transitions do not obey the law of the conservation of
energy (from the solution the relativistically invariant
relation between energy and momentum does not follow). Transi-
tions of particles from one state into another always develops
via virtual states, the physical sense of which is negative.
Besides, this process is not dealt with in a uniform manner
in publications. On the one hand, the same initial conditions
are assumed for the matrix of the virtual transitions as for
the real ones, and on the other, the initial conditions of
the processes in the second order are assumed, which, however,
leads to the same result. For processes of the third order
the results are different. This fact, does, however, not
prove an existing classification into real and virtual processes.

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On Virtual and Real Transitions in the Quantum Theory

In the present article the possibility of dealing differently
with quantum transitions, without distinguishing between
virtual and real processes, is investigated, and the attempt
is made to show that the differences in the solu-
tions are not connected with this classification into virtual
and real processes. The intermediate states, about which
the perturbation theory is not able to say anything, can
also, by the existence of the indeterminancy relation, be
considered to be real ones. As an example, the transition
matrix for processes of the 1. order (emission or absorption
of a photon by a free electron) is investigated. It is shown
that the virtual processes may be considered to be real,
in which case the law of the conservation of energy is
maintained to the extent to which it comprises the maintenance
of the relation $\Delta E_0 \geqslant \hbar/\tau$. From this point of view, the
total matrix $V[\vec{\sigma}]$ is then considered to be the sum of all
partial transition matrices. The simplified model of the
C-currents, in which the boson field is secondarily quantized
and the currents may be considered to be classical, is in-
vestigated. General equations of the perturbation theory

Card 2/3

On Virtual and Real Transitions in the Quantum Theory   SOV/55-58-6-1. 3'

        are obtained, and it is concluded that also the equation.. of
the perturbation theory may represent the relations between
the various real transitions without the introduction of
virtual transitions. It is further proved that the transiti:n
matrices in form of P-derivatives do not necessitate any
splitting up into real and virtual states. Questions relatia'
to the uniqueness of these solutions require further inv.''i-
gations. The authors thank Yu. M. Shirokov for discussi:
the problems arising in the course of this investigation.
There are 4 references, 3 of which are Soviet.

ASSOCIATION: Kafedra obshchey fiziki dlya mekhaniko-matematicheskogo
        fakul'teta
        (Chair of General Physics for the Mechanical and Mathematical
        Department)

SUBMITTED: December 12, 1957

Card 3/3

Myakishev, G Ya

25-58-4-37/41

AUTHOR: Myakishev, G.Ya., Candidate of Physico-Mathematical Sciences

TITLE: Artificial Precipitations (Iskusstvennyye osadki)

PERIODICAL: Nauka i Zhizn', 1958, Nr 4, pp 77 -78 (USSR)

ABSTRACT: The author gives answers to questions relating to the processes of artificial precipitations.

AVAILABLE: Library of Congress

Card 1/1   1. Artificial precipatation--Processes

MYAKISHEV

PHASE I   BOOK EXPOITATION   SOV/3905

Filosofskiye voprosy yestestvoznaniya, [sbornik] II: Nekotoryye filosofsko-teoreticheskiye voprosy fiziki, matematiki i khimii (Philosophic Problems of Natural Science, [Collection of Articles] II: Philosophic and Theoretical Problems of Physics, Mathematics, and Chemistry) [Moscow] Izd-vo Mosk. univ-ta, 1959. 248 p. Errata slip inserted. 8,000 copies printed.

Editorial Board: K.A. Rybnikov, Kh.M. Fataliyev, and M.I. Shakhparonov; Eds.: R.A. Aronov, and A.A. Konoplyankin; Tech. Ed.: M.S. Yermakov.

PURPOSE: This book is intended for scientists interested in the history and philosophy of mathematics, physics, and chemistry.

COVERAGE: This is a second collection of articles prepared by the staff of the Department of Dialectical Materialism of the Moscow State University. The first collection was concerned with philosophical problems of the biological sciences, specifically Michurin's theories. The present collection consists of 14 articles divided by fields: physics, mathematics, and chemistry. The collection commemorates

Card 1/4

86275

S/188/60/000/005/004/010
B019/B056

26.7340
AUTHOR: Myakishev, G. Ya.

TITLE: The Condition for the Occurrence of a Potential Minimum in an
            Electron Beam Moving in a Retarding Electric Field

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika,
            astronomiya, 1960, No. 5, pp. 19 - 27

TEXT: The author proceeds from the set of equations

$$\partial f(t,x,v)/\partial t + v\partial f(t,x,v)/\partial x + (e\partial\varphi(t,x)/m\partial x)(\partial f(t,x,v)/\partial v) = 0$$

$$\partial^2\varphi(t,x)/\partial x^2 = 4\pi e \int_{-\infty}^{+\infty} f(t,x,v)dv \ ,$$

where $f(t,x,v)$ is the electron distribution function, and $\varphi(t,x)$ is the
potential. After substitution of suitable parameters, he finds an
assumption in that a minimum of potential exists. As a condition for this
existence of a minimum he obtains

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The Condition for the Occurrence of a Potential S/188/60/000/005/004/010
Minimum in an Electron Beam Moving in a   B019/B056
Retarding Electric Field

$$J(V_0, v_0) = \int_0^V \left\{ \frac{2}{\sqrt{\pi}} \int_0^\infty \exp{-(\sqrt{y+V_0} - v_0/\sqrt{2})^2} (\sqrt{y+\eta} - y) dy + \frac{4}{\sqrt{\pi}} \int_{-\eta}^0 \exp \right.$$

$$\left. -(\sqrt{y+V_0} - v_0/\sqrt{2})^2 \sqrt{y+\eta} \, dy \right\}^{-1/2} d\eta \leqslant 1 \qquad (20) \ .$$

Here, 1 is the distance between lattice and reflector; V_0 is the potential
difference; and v_0 is the average electron velocity. From this condition
the author concludes that a potential minimum may be brought about by
retarding voltages exceeding the accelerating potential difference. The
results obtained were calculated on the computer "Strela". L.A.Vaynshteyn
is mentioned. V. A. Druzhinina and V. B. Glasko are thanked for carrying
out calculations on the "Strela" computer. There are 2 figures, 1 table,
and 4 Soviet references.

ASSOCIATION: Kafedra obshchey fiziki dlya mekhmata (Department of General
             Physics, Mechanics, and Mathematics)

SUBMITTED: December 8, 1959

Card 2/2

MYAKISHEV, G.Ya.

Theory of the static characteristics of a flat diode without an
incandescent cathode taking the thermal distribution of electron
velocities into account. Radio tekh. i elektron. 6 no.2:303-312
F '61.
(MIRA 14:2)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta
im. M.V. Lomonosova.
(Diodes)

BUKHOVTSEV, B.B. (Moskva); KERZHENTSEV, V.V. (Moskva); MYAKISHEV, G.
    Ya. (Moskva)

    Physics Olympiad of 1961 at the Moscow State University.
    Fiz. v shkole 21 no.6:82-85 N-D '61.   (MIRA 14:12)
                (Physics--Competitions)

BUKHOVTSEV, B.B. (Moskva); KERZHENTSEV, V.V. (Moskva); MYAKISHEV, G.Ya.
(Moskva)

The 23d Olympiad of Physics at the Physics Faculty of Moscow
University in 1962. Fiz.v shkole 22 no.5:102-104 S-O '62.
(MIRA 15:12)

(Physics—Competitions)

MYAKISHEV, G.Ya.

Statistical laws as an expression of the necesssary interrelations
in nature. Ist. i metod. est. nauk 2:121-134 '63. (MIRA 16:11)